No. 200000145

THE UNITED STATES OF AMERICA

TO ALL TO WHOM THESE PRESENTS SHALL COME:

Minnesota Agricultural Experiment Station

Whereas, THERE HAS BEEN PRESENTED TO THE

Secretary of Agriculture

AN APPLICATION REQUESTING A CERTIFICATE OF PROTECTION FOR AN ALLEGED DISTINCT VARIETY OF SEXUALLY REPRODUCED, OR TUBER PROPAGATED PLANT, THE NAME AND DESCRIPTION OF WHICH ARE CONTAINED IN THE APPLICATION AND EXHIBITS, A COPY OF WHICH IS HEREUNTO ANNEXED AND MADE A PART HEREOF, AND THE VARIOUS REQUIREMENTS OF LAW IN SUCH CASES MADE AND PROVIDED HAVE BEEN COMPLIED WITH, AND THE TITLE THERETO IS, FROM THE RECORDS OF THE PLANT VARIETY PROTECTION OFFICE, IN THE APPLICANT(S) INDICATED IN THE SAID COPY, AND WHEREAS, UPON DUE EXAMINATION MADE, THE SAID APPLICANT(S) IS (ARE) ADJUDGED TO BE ENTITLED TO A CERTIFICATE OF PLANT VARIETY PROTECTION UNDER THE LAW.

NOW, THEREFORE, THIS CERTIFICATE OF PLANT VARIETY PROTECTION IS TO GRANT UNTO THE SAID APPLICANT(S) AND THE SUCCESSORS, HEIRS OR ASSIGNS OF THE SAID APPLICANT(S) FOR THE TERM OF TWENTY YEARS FROM THE DATE OF THIS GRANT, SUBJECT TO THE PAYMENT OF THE REQUIRED FEES AND PERIODIC REPLENISHMENT OF VIABLE BASIC SEED OF THE VARIETY IN A PUBLIC REPOSITORY AS PROVIDED BY LAW, THE RIGHT TO EXCLUDE OTHERS FROM SELLING THE VARIETY, OR OFFERING IT FOR SALE, OR REPRODUCING IT, OR IMPORTING IT, OR EXPORTING IT, OR CONDITIONING IT FOR PROPAGATION, OR STOCKING IT FOR ANY OF THE ABOVE PURPOSE , OR USING IT IN PRODUCING A HYBRID OR DIFFERENT VARIETY THEREFROM, TO THE EXTENT PROVIDED BY THE PLANT VARIETY PROTECTION ACT. IN THE UNITED STATES SEED OF THIS VARIETY (1) SHALL BE SOLD BY VARIETY NAME ONLY AS A CLASS OF CERTIFIED SEED AND (2) SHALL CONFORM TO THE NUMBER OF GENERATIONS SPECIFIED BY THE OWNER OF THE RIGHTS. (84 STAT. 1542, AS AMENDED, 7 U.S.C. 2321 ET SEQ.)

SOYBEAN

'MN1801'

In Testimony Whereof, I have hereunto set my hand and caused the seal of the Plant Variety Protection Office to be affixed at the City of Washington, D.C. this eighth day of May, in the year of our Lord two thousand one.

Attest:

Acting Commissioner
Plant Variety Protection Office
Agricultural Marketing Service

Secretary of Agriculture

REPRODUCE LOCALLY. *Include form number and date on all reproductions*

Form Approved - OMB No. 0581-005

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY - PLANT VARIETY PROTECTION OFFICE

APPLICATION FOR PLANT VARIETY PROTECTION CERTIFICATE

(Instructions and information collection burden statement on reverse)

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

Application is required in order to determine if a plant variety protection certificate is to be issued (7 U.S.C. 2421). Information is held confidential until certificate is issued (7 U.S.C. 2426).

1 NAME OF OWNER
Minnesota Agricultural Experiment Station
University of Minnesota

2. TEMPORARY DESIGNATION OR EXPERIMENTAL NAME
M91-1137

3. VARIETY NAME
MN1801

4 ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP Code, and Country)*
190 Coffey Hall
1420 Eckles Avenue
St. Paul, MN 55108

5. TELEPHONE *(include area code)*
612-625-4211

FOR OFFICIAL USE ONLY
PVPO NUMBER 20000145

6. FAX *(include area code)*
~~612-625-0286~~ R.S. 2/3/00
612-624-7724

FILING DATE
2/7/00

7. IF THE OWNER NAMED IS NOT A "PERSON", GIVE FORM OF ORGANIZATION *(corporation, partnership, association, etc.)*
University

8. IF INCORPORATED, GIVE STATE OF INCORPORATION

9. DATE OF INCORPORATION

10 NAME AND ADDRESS OF OWNER REPRESENTATIVE(S) TO SERVE IN THIS APPLICATION. *(First person listed will receive all papers)*
J.H. Orf
Department of Agronomy and Plant Genetics
University of Minnesota
1991 Upper Buford Circle
411 Borlaug Hall
St. Paul, MN 55108-6026

FEES RECEIVED
FILING AND EXAMINATION FEES: $ 2450 oc
DATE 2/7/00
CERTIFICATION FEE: $ 320 oc
DATE 4/23/01

11. TELEPHONE *(Include area code)*
612-625-8275

12. FAX *(Include area code)*
612-625-1268

13. E-MAIL
orfxx001@maroon.tc.umn.edu

14. CROP KIND *(Common Name)*
soybean

15 GENUS AND SPECIES NAME OF CROP
Glycine max

16. FAMILY NAME *(Botanical)*
Leguminosae

17. IS THE VARIETY A FIRST GENERATION HYBRID?
☐ YES ☒ NO

18. CHECK APPROPRIATE BOX FOR EACH ATTACHMENT SUBMITTED (Follow instructions on reverse)

a. ☒ Exhibit A. Origin and Breeding History of the Variety
b. ☒ Exhibit B. Statement of Distinctness
c. ☒ Exhibit C. Objective Description of Variety
d. ☒ Exhibit D. Additional Description of the Variety *(Optional)* R.S. 2/3/00
e. ☒ Exhibit E. Statement of the Basis of the Owner's Ownership
f. ☒ Voucher Sample *(2,500 viable untreated seeds or, for tuber propagated varieties, verification that tissue culture will be deposited and maintained in an approved public repository)*
g. ☒ Filing and Examination Fee ($2,450), made payable to "Treasurer of the United States" *(Mail to the Plant Variety Protection Office)*

19. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE SOLD AS A CLASS OF CERTIFIED SEED? *See Section 83(a) of the Plant Variety Protection Act)*
☒ YES *(If "yes", answer items 20 and 21 below)* ☐ NO *(If "no," go to item 22)*

20. DOES THE OWNER SPECIFY THAT SEED OF THIS VARIETY BE LIMITED AS TO NUMBER OF GENERATIONS?
☒ YES ☐ NO

21. IF "YES" TO ITEM 20, WHICH CLASSES OF PRODUCTION BEYOND BREEDER SEED?
☒ FOUNDATION ☒ REGISTERED ☒ CERTIFIED

22. HAS THE VARIETY (INCLUDING ANY HARVESTED MATERIAL) OR A HYBRID PRODUCED FROM THIS VARIETY BEEN SOLD, DISPOSED OF, TRANSFERRED, OR USED IN THE U. S. OR OTHER COUNTRIES?
☐ YES ☒ NO
IF YES, YOU MUST PROVIDE THE DATE OF FIRST SALE, DISPOSITION, TRANSFER, OR USE FOR EACH COUNTRY AND THE CIRCUMSTANCES. *(Please use space indicated on reverse.)*

23. IS THE VARIETY OR ANY COMPONENT OF THE VARIETY PROTECTED BY INTELLECTUAL PROPERTY RIGHT *(PLANT BREEDER'S RIGHT OR PATENT)*?
☐ YES ☒ NO
IF YES, PLEASE GIVE COUNTRY, DATE OF FILING OR ISSUANCE AND ASSIGNED REFERENCE NUMBER. *(Please use space indicated on reverse.)*

24. The owners declare that a viable sample of basic seed of the variety will be furnished with application and will be replenished upon request in accordance with such regulations as may be applicable, or for a tuber propagated variety a tissue culture will be deposited in a public repository and maintained for the duration of the certificate.

The undersigned owner(s) is(are) the owner of this sexually reproduced or tuber propagated plant variety, and believe(s) that the variety is new, distinct, uniform, and stable as required in Section 42, and is entitled to protection under the provisions of Section 42 of the Plant Variety Protection Act.

Owner(s) is(are) informed that false representation herein can jeopardize protection and result in penalties.

SIGNATURE OF OWNER		SIGNATURE OF OWNER	
Charles C. Muscoplat			
NAME *(Please print or type)*		**NAME** *(Please print or type)*	
Charles C. Muscoplat			
CAPACITY OR TITLE	**DATE**	**CAPACITY OR TITLE**	**DATE**
Director, MAES	2/1/00		1

Exhibit A

Origin and Breeding History of MN1801 Soybean

'MN1801' soybean traces to the F_5 progeny of an F_4 plant harvested from a population that had been advanced by a modified single seed descent procedure from the cross Kasota x Kenwood. Bulked seed of the F_5 row was designated M91-1137 and was used for yield testing in the F_6 (1992). Subsequent tests of strain M91-1137 were conducted in Minnesota in the F_7 (1993) and F_8 (1994). In the F_8 generation 50 typical plants were harvested individually to initiate purification for deservable traits including reaction to race 1 and race 7 of phytophthora root rot. In the F_9 (1995) M91-1137 was entered in the Preliminary Regional Soybean Test Maturity Group I. In 1995 twenty-eight rows were grown for purification purposes. Nineteen rows appeared uniform for plant and seed characteristics including reaction to race 1 and race 7 of phytophthora root rot, therefore seed of these rows was bulked to provide breeder's seed. In the F_{10} (1996), F_{11} (1997), and F_{12} (1998) M91-1137 continued to be tested in the Uniform Regional Soybean Test Maturity Group I. In the F_{10} (1996) a small increase of breeders seed was made. In the F_{11} (1997) Foundation Seed was produced by the Minnesota Foundation Seed Organization. In 1998 Foundation seed was made available to other states for increase. In the F_{12} (1998) seed was increased and M91-1137 was approved for release as MN1801. On February 15, 1999 seed of MN1801 was released to growers in Minnesota. No off types were noted in the seed multiplication process of MN1801 over three generations. This variety breeds true and meets certification standards.

Exhibit B

Statement of Distinctiveness

'MN1801' soybean is most similar to 'Parker' soybean. MN1801 is approximately three days later in maturity than Parker. The yield of MN1801 is about 5% greater than Parker. MN1801 is about 1 inch taller than Parker. MN1801 has a lodging score of 1.8 compared to 2.7 for Parker. Seed of MN1801 is about 1.9 grams per 100 seed smaller than Parker. MN1801 has about 0.6 percent higher protein content and similar oil content compared to Parker. Seed of MN1801 has buff hila the same as Parker. MN1801 has purple flowers while Parker has white flowers.

Data comparing MN1801 is taken from the Uniform Test I, Northern States 1996-1998 (a total of 41 tests for most traits).

Variety	Date Mature	Yield bu/a	Height Inches	Lodging Score	Seed size G/100	Protein %	Oil %
MN1801	9/21	51.3	37	1.8	15.7	42.1	20.3
Parker	9/18	48.9	36	2.7	17.6	41.5	20.3

U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE
SCIENCE AND TECHNOLOGY
PLANT VARIETY PROTECTION OFFICE
BELTSVILLE, MD 20705

EXHIBIT C
(Soybean)

OBJECTIVE DESCRIPTION OF VARIETY
SOYBEAN (*Glycine max* (L.) Merr.)

NAME OF APPLICANT(S) Minnesota Agricultural Experiment Station University of Minnesota	**FOR OFFICIAL USE ONLY** **PVPO NUMBER** 200000145
ADDRESS *(Street and No. or R.F.D. No., City, State, and ZIP Code)* 190 Coffey Hall 1420 Eckles Ave. St. Paul, MN 55108-6026	**VARIETY NAME** MN1801
	TEMPORARY OR EXPERIMENTAL DESIGNATION M91-1137

PLEASE READ ALL INSTRUCTIONS CAREFULLY: Place the appropriate number that describes the varietal character of this variety in the boxes below. Place a zero in the first box (e.g. [0][9] or [0][9]) when number is either 99 or less or 9 or less respectively. Data for quantitative plant characters should be based on a minimum of 100 plants. Comparative data should be determined from varieties entered in the same trial. Royal Horticultural Society or any recognized color standard may be used to determine plant colors; designate system used: _____
Please answer all questions for your variety; lack of response may delay progress of your application.

A. MORPHOLOGY

Seed Shape:

[2]

1 = Spherical (L/W, L/T, and T/W ratios < 1.2)
2 = Spherical-Flattened (L/W ratio > 1.2; L/T ratio < 1.2)
3 = Elongate (L/T ratio > 1.2; T/W ratio < 1.2)
4 = Elongate-Flattened (L/T ratio > 1.2;T/W ratio > 1.2)

Seed Coat Color:

[1] **1 = Yellow** **2 = Green** **3 = Brown** **4 = Black** **5 = Other (*Please Specify*) _____**

Seed Coat Luster:

[2] **1 = Dull** **2 = Shiny**

Seed Size:

[1][6] **grams/100 seeds**

Hilum Color:

[1] **1 = Buff** **2 = Yellow** **3 = Brown** **4 = Gray** **5 = Imperfect Black**
6 = Black **7 = Other (*Please Specify*) _____**

Cotyledon Color:

[1] **1 = Yellow** **2 = Green**

A. MORPHOLOGY (*Continued*)

Seed Protein Peroxidase Activity:

[1] 1 = Low 2 = High

Hypocotyl Color:

[4] 1 = Green 'Evans' or 'Davis' | 2 = Green with Bronze Bands below Cotyledon 'Woodworth' or 'Tracy' | 3 = Light Purple below Cotyledons 'Beeson' or 'Pickett 71' | 4 = Dark Purple extending to unifoliolate leaves ('Hodgson', 'Coker', or 'Hampton 266A')

Leaf Shape:

[3] 1 = Lanceolate 2 = Oval 3 = Ovate 4 = Other (*Please Specify*) _____

Flower Color:

[2] 1 = White 2 = Purple 3 = White with a Purple Throat

Pod Color:

[2] 1 = Tan 2 = Brown 3 = Black

Pubescence Color:

[1] 1 = Gray 2 = Brown (Tawny) 3 = Light Tawny

Plant Habit:

[3] 1 = Determinate 2 = Semi - Determinate 3 = Indeterminate 4 = Intermediate

B. DISEASE REACTIONS

0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Tolerant

Bacterial

[0] Bacterial Pustule (*Xanthomonas campestris* pv. *glycines* (Nakano) Dye)

[0] Bacterial Blight (*Pseudomonas syringae* pv. *glycinea* (Coerper) Young, Dye, & Wilkie)

[0] Wildfire Blight (*Pseudomonas syringae* pv. *tabaci* (Wolf & Foster) Young, Dye, & Wilkie)

Fungal

[0] Brown Spot (*Septoria glycines* Hemmi)

Frogeye Leaf Spot (*Cercospora sojina* Hara)

[0] race 1 [0] race 2 [0] race 3 [0] race 4

[0] race 5 [0] race 6 [0] Other (*Please Specify*) _____

[0] Target Spot (*Corynespora cassiicola* (Berk. & Curt.) Wei)

[0] Downey Mildew (*Peronospora trifoliorum* var. *manchurica* (Naum.) Syd. ex Gäum)

B. DISEASE REACTIONS (*Continued*) **0 = Not Tested** **1 = Susceptible** **2 = Resistant** **3 = Tolerant**

20000145

[0] **Powdery Mildew (*Microsphaera diffusa* Cke. & Pk.)**

[1] **Brown Stem Rot (*Phialophora gregata* (Allington & Chamberlain) W. Gams.)**

[0] **Stem Canker (*Diaporthe phaseolorum* (Cke. & Ell.) Sacc. var. *caulivora* Athow & Caldwell)**

[2] **Pod and Stem Blight (*Diaporthe phaseolorum* (Cke. & Ell.) Sacc. var. *sojae* (Lehman) Wehm.)**

[0] **Purple Seed Stain (*Cercospora kikuchii* (T. Matsu. & Tomoyasu) Gardener)**

[0] **Rhizoctonia Root Rot (*Rhizoctonia solani* Kühn)**

Phytophthora Root Rot (*Phytophthora megasperma* Drechs. f. sp. *glycinea* (Kuan & Erwin))

[2]	race 1	[0]	race 8	[0]	race 15	[0]	race 22
[0]	race 2	[0]	race 9	[0]	race 16	[0]	race 23
[2]	race 3	[0]	race 10	[0]	race 17	[0]	race 24
[0]	race 4	[0]	race 11	[0]	race 18	[0]	race 25
[0]	race 5	[1]	race 12	[0]	race 19	[0]	race 26
[0]	race 6	[0]	race 13	[0]	race 20	[0]	race 27
[2]	race 7	[0]	race 14	[0]	race 21	[ ]	Other (*Please Specify*) _____

[0] **Bud Blight (Tobacco Ringspot Virus)**

[0] **Yellow Mosaic (Bean Yellow Mosaic Virus)**

[0] **Cowpea Mosaic (Cowpea Chlorotic Virus)**

[0] **Pod Mottle (Bean Pod Mottle Virus)**

[0] **Seed Mottle (Soybean Mosaic Virus)**

Nematode

Soybean Cyst Nematode (*Heterodera glycines* Ichinohe)

[0]	race 1	[1]	race 3	[0]	race 6	[0]	race 14 (former r. 4)
[0]	race 2	[0]	race 5	[0]	race 9	[ ]	Other (*Please Specify*) _____

[0] **Lance Nematode (*Hoplolaimus columbus* Sher)**

[0] **Southern Root Knot Nematode (*Meloidogyne incognita* (Kofoid & White) Chitwood)**

[0] **Northern Root Knot Nematode (*Meloidogyne hapla* Chitwood)**

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B. DISEASE REACTIONS (*Continued*) 0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Tolerant

20000145

[0] Peanut Root Knot Nematode (*Meloidogyne arenaria* (Neal) Chitwood)

[0] Reniform Nematode (*Rotylenchus reniformus* Linwood & Olivera)

[0] Javanese Nematode (*Meloidogyne javanica* (Treub) Chitwood)

[ ] Other Nematode (*Please Specify*) _____

C. PHYSIOLOGICAL RESPONSES 0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Tolerant

[3] Iron Chlorosis on Calcareous Soil

[0] Phosphorus

[0] Boron

[0] Aluminum

[0] Salt

[0] Drought

[ ] Other (*Please Specify*) _____

D. INSECT REACTIONS 0 = Not Tested 1 = Susceptible 2 = Resistant 3 = Tolerant

[0] Mexican Bean Beetle (*Epilachna varivestis* Mulsant)

[0] Potato Leaf Hopper (*Empoasca fabae* (Harris))

[ ] Other (*Please Specify*) _____

E. HERBICIDE REACTIONS 0 = Not Tested 1 = Susceptible 2 = Resistant

[0] Metribuzin

[0] Bentazone

[0] Sulfonylurea

[0] Glyphosate

[0] Glufosinate

[0] Pendimethalin

[ ] Other (*Please Specify*) _____

F. TRANSGENIC COMPOSITION

Has the development of the Subject Variety included the insertion or removal of genetic material? [ ] Yes [X] No

If yes, please complete the following information requests*. Use additional pages if necessary.

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F. TRANSGENIC COMPOSITION (*Continued*)

200000145

1. **Please state the vector's name:**

2. **Please state the vector components:**

3. **Please describe the genetic material successfully transferred into the Subject Variety:**

4. **Please describe the insertion protocol:**

* **A literature citation(s) explaining the four information requests above may be an acceptable alternative to completion of the "Transgenic Composition" portion of this form.**

G. BIOCHEMICAL MARKERS

Please describe any biochemical information here which you believe will be helpful in further describing the Subject Variety (*e.g.* Simple Sequence Repeats, Random Fragment Length Polymorphisms, Isozymic Characterization). Use additional pages if necessary.

H. COMMENTS

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U.S. DEPARTMENT OF AGRICULTURE
AGRICULTURAL MARKETING SERVICE

EXHIBIT E
STATEMENT OF THE BASIS OF OWNERSHIP

The following statements are made in accordance with the Privacy Act of 1974 (5 U.S.C. 552a) and the Paperwork Reduction Act (PRA) of 1995.

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1. NAME OF APPLICANT(S)	2. TEMPORARY DESIGNATION OR EXPERIMENTAL NUMBER	3. VARIETY NAME
Minnesota Agricultural Experiment Station University of Minnesota	M91-1137	MN1801

4. ADDRESS *(Street and No., or R.F.D. No., City, State, and ZIP, and Country)*	5. TELEPHONE *(include area code)*	6. FAX *(include area code)*
190 Coffey Hall 1420 Eckles Avenue St. Paul, MN 55108	612-625-4211	612-625-0286

7. PVPO NUMBER 200000145

8. Does the applicant own all rights to the variety? *Mark an "X" in appropriate block.* If no, please explain. [X] YES [ ] NO

9. Is the applicant (individual or company) a U.S. national or U.S. based company? [X] YES [ ] NO
If no, give name of country

10. Is the applicant the original owner? [X] YES [ ] NO *If no, please answer one of the following:*

a. If original rights to variety were owned by individual(s), is (are) the original owner(s) a U.S. national(s)?

[ ] YES [ ] NO If no, give name of country

b. If original rights to variety were owned by a company(ies), is(are) the original owner(s) a U.S. based company?

[ ] YES [ ] NO If no, give name of country

11. Additional explanation on ownership *(if needed, use reverse for extra space)*:

The University of Minnesota is the employer of the breeder who developed MN1801.

PLEASE NOTE:

Plant variety protection can be afforded only to owners (not licensees) who meet one of the following criteria:

1. If the rights to the variety are owned by the original breeder, that person must be a U.S. national, national of a UPOV member country, or national of a country which affords similar protection to nationals of the U.S. for the same genus and species.

2. If the rights to the variety are owned by the company which employed the original breeder(s), the company must be U.S. based, owned by nationals of a UPOV member country, or owned by nationals of a country which affords similar protection to nationals of the U.S. for the same genus and species.

3. If the applicant is an owner who is not the original owner, both the original owner and the applicant must meet one of the above criteria.

The original breeder/owner may be the individual or company who directed final breeding. See Section 41(a)(2) of the Plant Variety Protection Act for definition.